B.L.D.E.ASSOCIATION'S
SB ARTS AND K.C.P. SCIENCE COLLEGE, VIJAYAPUR
RE-ACCREDITED AT THE 'B^{++}' LEVEL
Masters of Science in Physics
PROGRAM OUTCOMES

	DESCRIPTIONS
PSO1	Understanding of fundamental concepts, theorems, problem solving and concept of measures to all subjects.
PSO2	Acquiring knowledge on experiments, critical thinking, problem solving, analyzing data and relevant methodologies.
PSO3	Opportunities in higher research like JRF,SRF, Research Assistant
PSO4	Opportunities in higher education, competitive exams and scientific job opportunities.

PO1	Acquiring the fundamental Knowledge: definition, concept, methods, conversion of units and measurements and proper understanding of physics
PO2	Enhancement of skills: Designing circuits, block diagram, nature of graph, comparing theory with experimental results
PO3	Developments of lab skills: knowledge of components, Equipment's, connections and use of instruments, Analysis of theoretical concepts
PO4	Building scientific temper: Correlation of various concepts and phenomenon of physics
PO5	Innovative methods: acquisition of knowledge through projects works
PO6	Discovery of physic concept to other disciplines like chemistry, computer science and Engineering, Medical Science, Life Science, space
PO7	Inculcate ethical values: Students will realize and develop and understanding of impact of physics on society
PO8	Instills Research culture: after graduation student will address the problems of societal and industrial interest
PO9	Enhancement of presentation and writing skills
PO10	Project works: Enhancement of skills in learning feasibility study, Literature survey, Designing , report writing
PO11	Research and development opportunities after completion of Post-Graduation may be Junior research fellow

Course outcomes

Class	Paper	Course Outcomes	Descriptions
M.Sc I semester	20MScPHCT11 Mathematical Methods in Physics		This course will enable the students to
		CO1	Applications of special functions to solve problems on in physics
		CO2	Applications of Matrices and Integral transforms to solve physics problems
		CO3	Study the tensors quantities in physics
		CO4	Use of group theory to molecular spectra
		CO5	Applications of Greens function to solve Physical Problems
	20MScPHCT12 Classical Mechanics	CO1	Able to understand the mechanical finding the force, energy ,etc
		CO2	Converting two body problem into single body problem
		CO3	Study the motion of body in fixed and moving coordinate systems
		CO4	To Study the conservation laws of physics in vector form using bracket laws
		CO5	Application of Hamiltonian mechanics
	20MScPHCT13 Nuclear and Particle Physics (General)	CO1	Understanding the concept of nucleus and its properties
		CO2	Gain an idea about different nuclear models and nucleus processes
		CO3	Studying the nuclear reactors using chain reaction
		CO4	Interactions of types of radiations and charge particular with matter
		CO5	Understanding the principal and working of G.M.Counter and scintillations counter.
	20MScPHCT14 Condensed Matter Physics (General)	CO1	Basic understanding of structure of materials(Crystals)
		CO2	Studying the different thermal properties of crystal
		CO3	Understanding the types of materials by their electrical properties
		CO4	Study the effect of electromagnetic field on semiconductors
		CO5	Understudying the parameters of a solid crystals and elements.

M.Sc II Semester:	20MScPHCT21 Quantum Mechanics -I	CO1	Students can understand the how to find position and momentum of a particles
		CO2	To understand the applications and physical interpretation of Schrödinger wave equation
		CO3	To study the properties like energy and states of a H-atom
		CO4	Students can understand about the perturbation in the physical systems
		CO5	To study the scattering of particles and potentials
	20MScPHCT22 Atomic, Molecular and Optical Physics (General)	CO1	To understand the structure of atoms and its properties
		CO2	To understand the structure of molecules and its properties
		CO3	Students can understand applications and working properties of laser light
		CO4	To study the working and applications fiber optics
		CO5	To understand the experiment on divergence of laser beam using grating element
		CO6	Students can find the numerical aperture of optical fiber
	20MScPHCT23 Electronics (General)	CO1	Students can understand principles and working of semiconductor devices
		CO2	Students get ability to build oscillators using operational amplifier
		CO3	To study digital circuits and code conversion
		CO4	Students can understand arithmetic operation using logic gates
		CO5	To understand how to converts digital to analog
		CO6	To study how to reduce the logic expression using k-map
M.Sc III Semester: Statistical Mechanics	20MScPHCT31 Statistical Mechanics	CO1	To Study the difference between the microscopic and macroscopic systems
		CO2	To build the knowledge about interaction between heat and systems and different types of interactions
		CO3	Students get ability, to distinguish the particles in different states
		CO4	Students can understand black-body radiation and its applications

		CO5	To get the knowledge about fluctuations.
	20MScPHCT32 Classical Electrodynamics	CO1	How to find the force and filed of a point charge
		CO2	To build the knowledge about dielectric materials in electrostatics
		CO3	How to find the force and field, energy of a moving charge
		CO4	Students can understand the use of waveguide as a optical fiber
		CO5	They can understand about plasma state and hydrodynamics
	O.E.C P.D.C.S (M.Ed)	CO1	To develop an awareness of the concept & dimensions of personality
		CO2	To understand the relationship between education & Personality Development
		CO3	To analyze the components of effective classroom communication
		CO4	To understand the factors of Mental Health & Role of education in its developments
	20MScPHCT33 Condensed Matter Physics-I	CO1	Students can understand about crystal structures and their properties
		CO2	To study the Fermi- level and Fermi-energy in metals and semiconductors
		CO3	To get knowledge about X-rays, Phonons and photons and its properties
		CO4	Students can understand transparent in semiconductors and metals
		CO5	To study how to classify the magnetic materials and their temperature dependence
		CO6	To study the hall effect in metals and semiconductors
		CO7	Experiment to find heat capacity of metals using calorimeter
M.Sc IV Semester:	20MScPHCT41 Quantum Mechanics -II	CO1	Students are also able to study operators in vector space
		CO2	To get knowledge about the dynamics of a system in operator form
		CO3	To study about vector form of angular momentum
		CO4	To get knowledge about how to find correction to energy and wave function of a physical system

		CO5	To study about relativistic QM
	20MScPH CT42 Advanced Mathematical Methods in Physics-II	CO1	To study about linear algebra
		CO2	How to solve differentiation and integration and equations using numerical methods
		CO3	How to apply partial differential equations to physics
		CO4	To solve numerical problems of physical systems
		CO5	To get physical systems knowledge about probability theory.
	20MScPH CT43 Condensed Matter Physics -II	CO1	To study the dielectric materials and its properties
		CO2	Study properties the phase transformation in ferroelectric materials
		CO3	Basics about semiconductor materials
		CO4	To study how electrons transport in semiconductors
		CO5	To understand basic principle of magnetic resonance
		CO6	To study magneto resistance of a semiconductor
		CO7	To study working of solar cells
	20MScPH CT44 Condensed Matter Physics - III	CO1	To understand working of semiconductor devices
		CO2	To study the how dimensional semiconductors
		CO3	Understand the properties of superconductors
		CO4	Students can understand about the different effects an superconductors
		CO5	They get knowledge about synthesis and characterization of nanomaterial's

Coordinator
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Principal
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